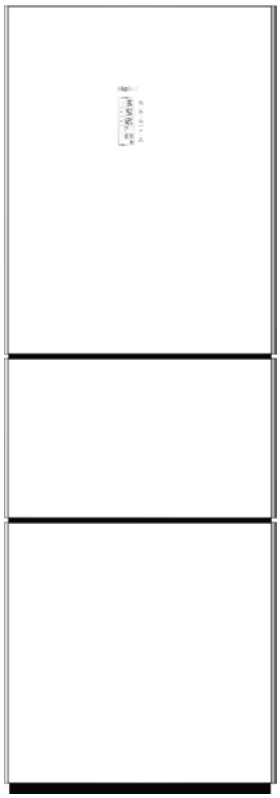
Haier SERVICE MANUAL

Order No. Ref1010S025V0

Refrigerator



MODEL: AFD626TGW
AFD626TGB
AFD626TGR
AFD626TGW/F
AFD626TGB/F
AFD626TGR/F

⚠ WARNING

This service information is designed for experienced repair technicians only and is not designed for use by the general public. It dose not contain warnings and cautions to advice non-technical individuals of potential dangers in attempting to service a product. Product powered by electricity should by serviced or repaired only by experienced professional technicians. Any attempt to service or repair the product or products dealt with in this service information by anyone else could result in serious injury or death.

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Haier Group

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Chapter 1 General Information

1-1. General guidelines

When servicing, observe the original lead dress. If a short circuit is found, replace all parts which have been overheated or damaged by the short circuit. After servicing, see to it that all the protective devices such as insulation barriers, insulation papers shields are properly installed. After servicing, make the following leakage current checks to prevent the customer from being exposed to shock hazards.

1) Leakage Current Cold Check
2) Leakage Current Hot Check
3) Prevention of Electro Static Discharge (ESD) to Electrostatic Sensitive

1-2. Insurance test

1. Check if there is any leak of current.
2. Cut out the power supply before the repair to avoid an electrical shock hazard.
3. In the case of a live-line test, insulating gloves should be worn to avoid potential electrical shock.
4. Confirm the rated current, voltage and capacity before testing with any kinds of instruments.
5. Watch if the upper door is open when you check something at a lower position.
6. Take out every part in the cabinet before moving the machine, especially things like panels (e.g. glass shelf).
7. Please wear intact cotton gloves when repair any parts of the evaporator, so that scratches by the sharp fins can be avoided.
8. If there is a breakdown with the refrigeration system, please surrender the machine to the service center, else the leaked refrigerant may pollute the atmosphere.
9. The refrigerator use AC of 220V with a frequency of 50Hz.
10. A big fluctuation of voltage (exceed the range 187～230V) may cause a start failure of the refrigerator, a burn-out of the control panel and compressor, or an abnormal sound from the compressor in operation. In this condition an automatic voltage regulator over 750W should be added.
11. Take care not to damage the supply line. Don’t yank at the line; pull the plug out gently from the receptacle. Don’t press the line under the cabinet or step on it. Take care not to roll on or damage the supply line when moves the machine from the wall.
12. In the case of leakage of inflammable gases like carbon monoxide, open the door and windows. Don’t pull out or insert the plugs of the appliance.
13. Don’t touch the refrigeration surface of the freezing compartment when the refrigerator is in operation, especially when your hand is wet, else you may be glued to the surface.
14. Pull out the plug of power supply during clearance or power outage. Wait at least five minutes to resume the power supply in order to prevent damage to the compressor caused by continuous restart.

Photo used in this manual

The illustration and photos used in this Manual may not base on the final design of products, which may differ from your products in some way.

1-3. How to read this service manual

1-3-1. Using Icons

The meaning of each icon is described in the table below:

Note:

A “note” provides information that is not indispensable, but may nevertheless be valuable to the reader, such as tips and tricks.

Caution:

A “caution” is used when there is danger, through incorrect manipulation, may damage equipment, loose data, get an unexpected result or has to restart (part of) a procedure.

Warning:

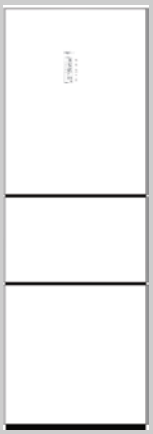
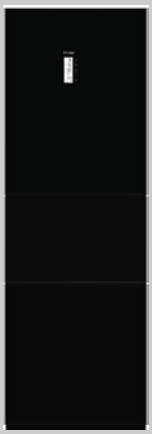
A “warning” is used when there is danger of personal injury.

Reference:

A “reference” guides to other places in this binder or in this manual, where we will find additional information on a specific topic.

Chapter 2 Product Feature

2-1. Specifications

1	Models		AFD626TGW AFD626TGW/F	AFD626TGB AFD626TGB/F	AFD626TGR AFD626TGR/F
	Sketch				
	Product description (Refrigerator/Freezer)		Refrigerator		
	Type of appliance (FS= freestanding/BI= built-in)		FS	FS	FS
	Type of cooling system(NF=no frost/ S=static)		NF	NF	NF
	Climate class*		SN N ST	SN N ST	SN N ST
	Freezer compartment / Star rating		4*	4*	4*
2	Key features				
	Gross capacity	L	298	298	298
	Total net capacity	L	254	254	254
	Net capacity refrigerator compartment	L	160	160	160
	Net muti-use compartment	L	34	34	34
	Net capacity freezer compartment /ice compartment	L	60	60	60
	Freezing capacity	kg	12kg	12kg	12kg
	Energy consumption / year	kWh	259	259	259
	Max storage time at breakdown *Freezer*	Min	820	820	820
	Defrosting (M=manual A=automatic)		A	A	A
	Frost free system		yes	yes	yes
	Defrost water outlet		yes	yes	yes
	Air circulating ventilator		yes	yes	yes
	Kind of coolant (R134a/R600a)		R600a/ 68g	R600a/ 68g	R600a/ 68g
3	Technical data				
	Voltage / frequency	V/Hz	220-240~/ 50	220-240~/ 50	220-240~/ 50
	Input power / mains fuse minimum	W /A	100/ (DC)	100/ (DC)	100/ (DC)
	Temperature range (from>to)	°C			
	Refrigerator		2-10°C	2-10°C	2-10°C
	Muti-use compartment		5~-18°C	5~-18°C	5~-18°C -

	Vegetable Crisper		2-10°C	2-10°C	2-10°C
	Freezer		-16 ~-26°C	-16 ~-26°C	-16 ~-26°C
	Features:				
	Energy consumption per l 100 net / year	kWh	102	102	102
	Energy consumption per l 100 net / 24h	kWh	0.28	0.28	0.28
	Cooling system: K=Compressor / A=Absorption		K	K	K
	Max noise level	dB(A)	42	42	42
4	**Aesthetics**				
	Colors: W=white G=silver gray B=Obsidian SS=stainless steel		W	BLACK	RED
	Fascia panel / Handle (w / c)		G/G	G/G	G/G
	F= flat / R= rounded / S= streamline		R	R	R
	Inside colour		w	w	w
	Compartments number	n°	3	3	3
	Bottle compartment	n°	4	4	4
	Hinged (r =right l =left) / reversible		r / X	r / X	r / X
	Shelves:				
	Number Fridge / Freezer		3 / -	3 / -	3 / -
	Type (gr=grill / g=glass / p=plastic)		g	g	g
	Color w-white / b=blue / t=transparent.		t	t	t
	Adjustable (Y=yes / N=not)		N	N	N
	Foldable Shelf		yes	yes	yes
	Bottle Rack		yes	yes	yes
	Drawers:				
	Plastic drawers (fully freezing comp.)	n°.	3	3	3
	Muti-use comp	n°.	2	2	2
	Colour of drawer (w=white/t=transp./g=green)		t	t	t
	Crisper:				
	Chiller / Meat (salad crisper) transparent / white		Chiller (t)	Chiller (t)	Chiller (t)
	Vegetable crisper(s) transparent / white		t	t	t
5	Equipment & accessories				
	Control panel				
	Interior / exterior		Exterior	Exterior	Exterior
	Thermometer interior / exterior		Interior	Interior	Interior
	Display type		LCD	LCD	LCD
	Control lamps green / yellow /white		W	W	W
	Over temperature alarm LED / acoustic		acoustic	acoustic	acoustic
	Adjustable thermostat		yes	yes	yes
	Fast freeze switch /-function		yes	yes	yes
	Deodorizing		yes	yes	yes
	Interior light	W	yes	yes	yes
	LED light	n°	Full	Full	Full

	Freeze pack(s)	n°	3	3	3
	ice maker Manual/ Automatic		M	M	M
	Ice cube tray(s)	n°	1	1	1
	Butter holder		yes	yes	yes
	Egg trays		2	2	2
	Adjustable feet front / rear	n°	2 / -	2 / -	2 / -
	Length of cable/incl. plug	cm	200	200	200
	Condenser Back wall / Integrated		I	I	I
6	Product dimensions				
	Unit dimensions (*H / W / D)*	cm	180/63/64	180/63/64	180/63/64
	Depth Without handle	cm	64	64	64
	Depth with open door	cm	119	119	119
	Door open angle	n°	<135	<135	<135
	Net weight	kg	78	78	78
7	Packing dimensions & load ability				
	Packing dimensions (*H / W / D)*	cm	185.5/74.7/71.4	185.5/74.7/71.4	185.5/74.7/71.4
	Gross weight	kg	92	92	92
	40 ' Container load	pcs	54	54	54
	40 ' HC Container load	pcs	72	72	72
8	Recycling symbols				
	Packing materials / Recycling symbols (RS)	RS	RS	RS	RS
	Carton *weight in gr*		6270	6270	6270
	Polystyrene *weight in gr*	06	2570	2570	2570
	Polyethylene foil *weight in gr*	04	210	210	210
9	Service				
	Users instruction *(languages)*		D / F / I / GB / E / P / NL		

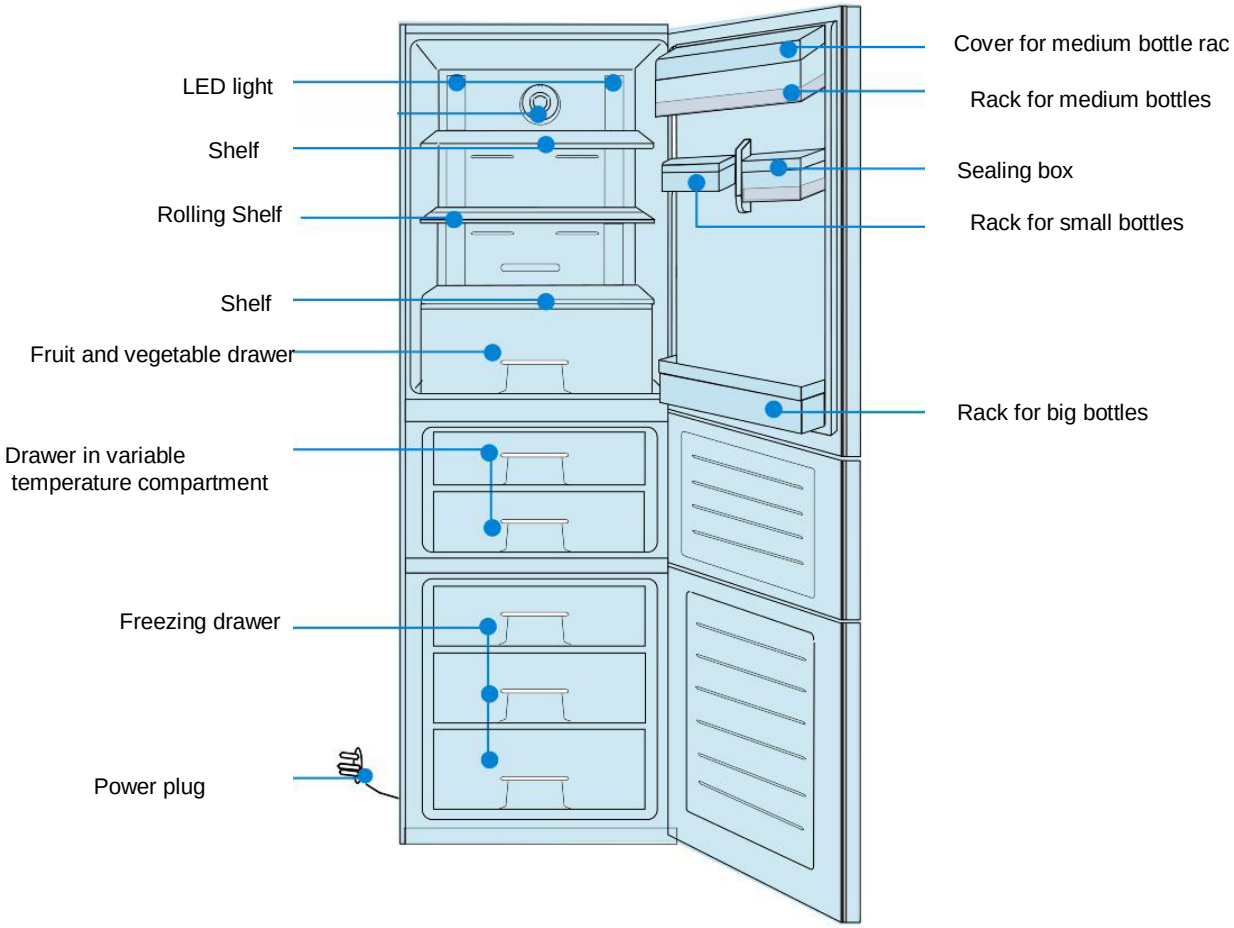
2-2. Main functions and features

- Full-frequency technology.
- Artificial intelligent automatic regulation of the temperature.
- Over-temperature alarm.
- Full temperature range of the variable temperature compartment
- LCD display.
- Holiday function.

2-3. External views

Refrigerator structure

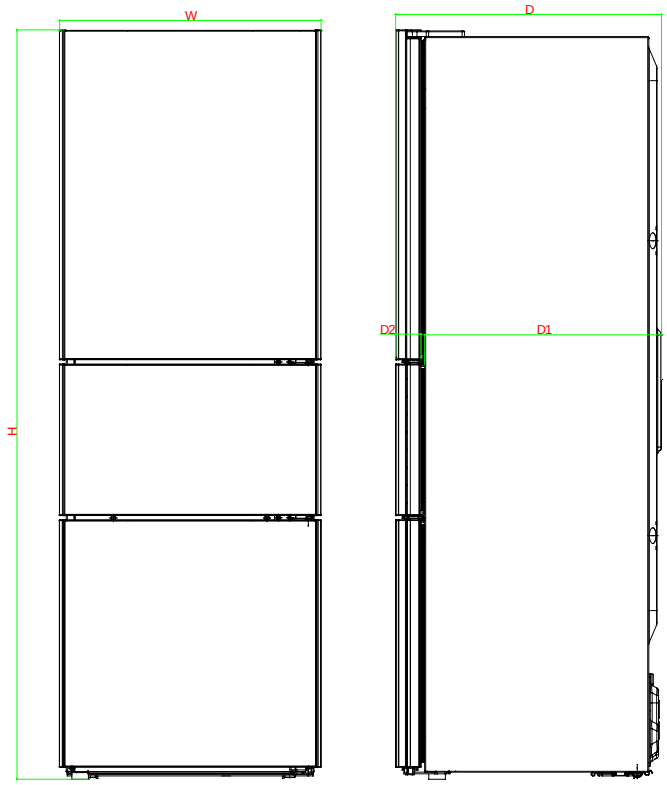
Fridge storage compartment



2-4. Product dimensions

Refrigerator Dimensions:

Refrigerator height H=1805mm
Refrigerator width W=630mm
Refrigerator depth D=640mm
Cabinet depth D1=560mm
Door depth D2=70mm



Chapter 3 Disassembly

3-1. Remove the variable temperature compartment drawer

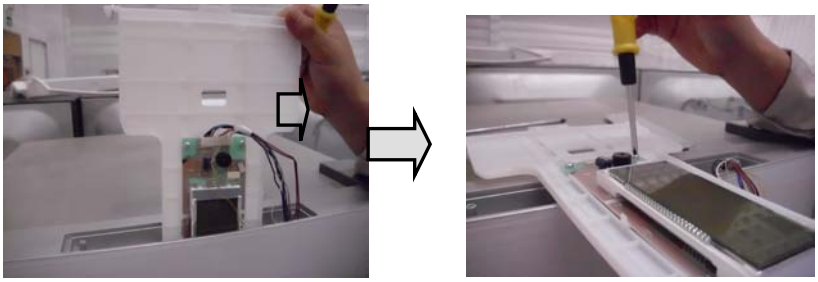
(1) Open the variable temperature compartment door (fig. ①);

(2) Remove 4 connectors of the drawer (fig. ②);

(3) Pull out 2 drawers from the cabinet (fig. ③).

3-2. Remove the display panel

① ② ③



④ ⑤

(1) Detach 2 screws fixing on the top cover of the fridge door (fig. ①);

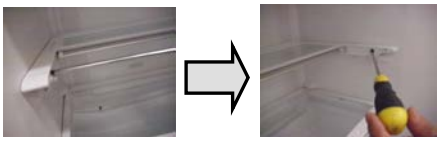
(2) Remove the top cover of the fridge door (fig. ②);

(3) Detach 2 screws fixing on the display panel box (fig. ③);

(4) Pull out the shelf of display panel and disconnect the connector of the display panel (fig. ④).

(5) Detach 2 screws fixing on the display panel shelf (fig. ⑤)

3-3. Remove the rolling shelf



① ②

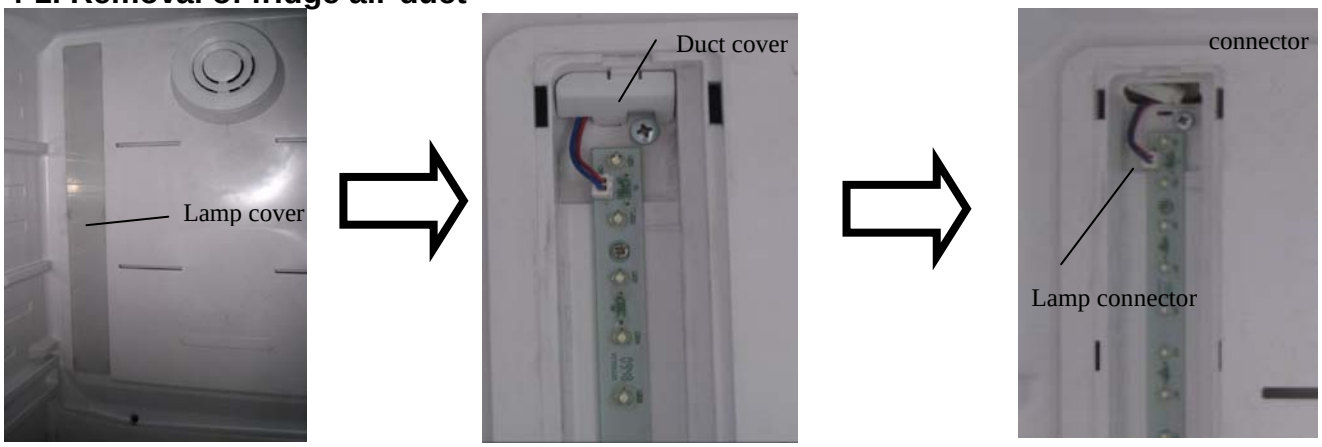
(1) slide in the rolling shelf (fig. ①);

(2) Detach 2 screws of the rolling shelf (fig. ②);

3-4. Remove the air-duct

Unplug the refrigerator before removing the air-duct

3-4-1. Removal of fridge air-duct



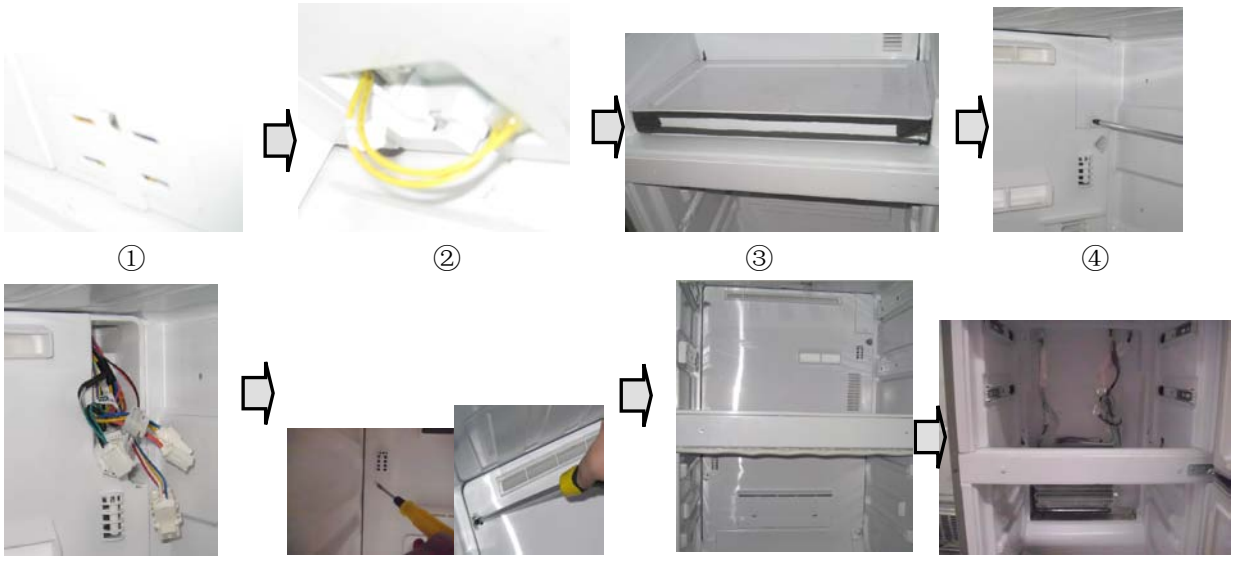
① ② ③

(1) Take out the accessories in the fridge storage compartment which may interfere with the removal of the air-duct (including shelves, Fruit and vegetable drawer).Tilt 2 lamp covers in the lower of the air-duct (fig. ①);

(2) Detach the duct cover in the upper part of the air-duct and detach 4 screws in the upper and lower part of the air-duct (fig. ②);

(3) Tilt the refrigeration air-duct forward entirely around its upper side until you can see the connector on its upper side. Pull out the connector and you can remove the refrigeration air-duct (fig. ③);

3-4-2. Removal of freezing air-duct



① ② ③ ④

⑤ ⑥ ⑦ ⑧

(1) Take out drawers in the variable temperature compartment and freezer storage compartment

which may interfere with the removal of the freezing air-duct .

(2) detach 4 screws in lower of the middle clapboard (fig ①);

(3) Disconnect the connector of the middle clapboard(fig ②);

(4) Remove the middle clapboard from the lower ; (fig ③);

(5) Detach the screw of the duct cover and remove it. (fig ④);

(6) Pull out the connectors and disconnect them (fig ⑤);

(7) Remove 4 small duct cover and detach 4 screws in the freezing air-duct onto the freezer chamber (fig ⑥);

(8) Tilt the freezing air-duct forward from top to bottom and disconnect the connectors of the freezing air duct ,then you can remove the air-duct (fig ⑦);

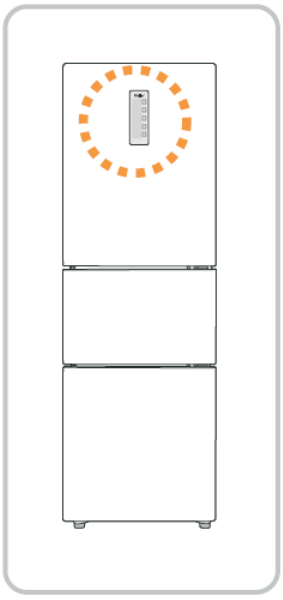
(9) Take out the freezing air-duct and the fin evaporator is just behind it (fig ⑧).

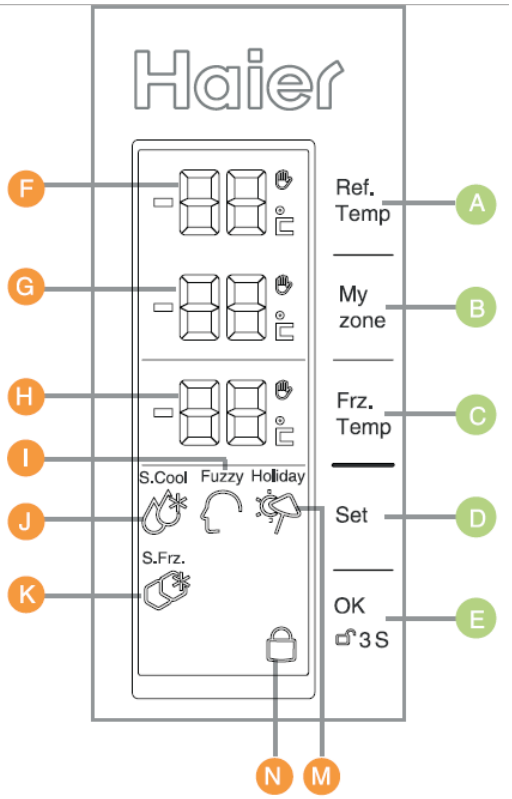
When reinstalling, please connect the connector first and then mount and fix the freezing air-duct.

Chapter 4 Control and display system

4-1. Control and display panel

LCD PANEL





Description of Display Screen

- F: Display of average temperature of refrigerating compartment
- G: Display of average temperature of variable temperature compartment
- H: Display of average temperature of freezing compartment
- I: Artificial intelligence symbol
- J: Rapid chill indicator
- K: Rapid freezing indicator
- M: Holiday function
- N: Locked

Description of buttons

- A: Fridge regulation
  The fridge compartment can be switched off by selecting the off selection.
- B: The variable temperature regulation.
  The variable temperature compart –ment can be switched off by selecting the variable temperature compartment to off.
- C: Freezer regulation
  The temperature of the freezing compartment can be regulated between –16℃ and –26℃.
  WARNING! The temperature should be –18℃ or colder.
- D: Function selection
- E: Setting Lock or Unlock function by pressing and holding for 3 seconds.

■Automatic temperature regulation of the refrigerator

●When the power is initially switched on, the refrigerator is in artificial intelligence mode (symbol I), the refrigerator will automatically regulate the temperature in the refrigerator compartments according to the ambient temperature.

●When the refrigerator is in the Unlock mode, pressing button D Function, and symbol I Artificial Intelligence is selected, the I symbol starts to flash. Press button E Setting to start the artificial intelligence mode, the symbol I is permanently displayed, indicating the artificial intelligence mode is operating. To stop the artificial intelligence mode press button E Setting and the symbol I will disappear indicating that the artificial intelligence mode has now stopped.

Caution

If artificial intelligence mode is operating and then the holiday function or rapid freezing is selected, the artificial intelligence mode will automatically stop.
When artificial intelligence mode is operating, changes of the temperature for refrigeration and rapid freezing can not be performed, however the variable temperature compartment can still be changed.
If refrigeration or freezing temperature is selected, the artificial intelligence symbol I will flash indicating that such operations are not permitted.

■Lock / Unlock

If symbol N is displayed, the panel is locked. Press and hold button E Setting for 3 seconds, symbol N shall disappear, and the panel is unlocked. Hold button E Setting again for 3 seconds, symbol N is displayed and the panel is locked again.

■Holiday function

In the unlocked mode pressing button D and selecting symbol M Holiday the symbol M will start to flash, press button E, symbol M will be permanent displayed indicating the holiday mode is operating. The fridge compartment will warm up to +17℃.

CAUTION: Remove any food and drink from the fridge compartment that may spoil due to the compartment being warm.

To cancel the holiday mode press button D select symbol M and press button E. Symbol M will disappear and the holiday mode stops.

Caution

Under holiday function, if artificial intelligence is set, holiday function shall be automatically stopped, and the Holiday symbol shall disappear; under holiday function, no regulation of refrigerating temperature can be performed, but the variable temperature and freezing temperature are exceptions. If symbol of holiday function flashes, it shall indicate that such operations are banned.

■Regulation of fridge compartment temperature between 2℃ and 10℃ and ON/OFF control, when in unlocked mode.

●Pressing button A to adjust the temperature and symbol F will start flashing.

●Each press of button A, the temperature shall be increased by 1℃ and recycled between 2℃~10℃ -OF. When it is set to be at OF shift, the refrigerating chamber shall be closed while at other shifts, it shall be started.

●Each press of button A, the temperature selection will increased by 1℃ between OFF and 2℃ to 10℃. At the OFF selection the fridge compartment will be at ambient temperature.

WARNING! The fridge compartment should not be set at a higher(warmer) temperature than 5℃ to keep bacteria growth to a minimum. The recommended temperature is 1℃ to 4℃.

Caution

If the refrigerating is set to be OF, the OF button shall flash when holiday function is selected, which indicates such an operation is banned.

■Regulation of variable temperature compartment between +5℃ and -18℃ and ON/OFF control, when in unlocked mode.

Warning

The temperature should not be set warmer (higher) than –18℃ for long term storage to prevent growth of bacteria in stored food.
If the temperature is warmer (higher) than –10℃ fungal spores, yeasts and pathogens will be active.

●Pressing button B to adjust the temperature and symbol G will start flashing.

●Each press of button B, the temperature selection will increase by 1℃ between OFF and +5℃ to -18℃. At the OFF selection the variable temperature compartment will be at ambient temperature.

●After the temperature is set, the system shall automatically confirm and save the temperature if no button operation is performed within 5 seconds; the symbol shall stop flashing, and the display shall return to the actual temperature. When the variable temperature chamber has attained its refrigerating effect, the set temperature shall be displayed.

■Regulation of freezer compartment temperature between -16℃ and -26℃ when in unlocked mode.

●Pressing button C to adjust the temperature and symbol H will start flashing.

●Each press of button C the temperature will decrease by 1℃ between -16℃ to -26℃.

Warning

The freezer temperature should not be set warmer (higher) than –18℃ for long term storage to prevent growth of bacteria in stored food.
If the temperature is warmer (higher) than –10℃ fungal spores, yeasts and pathogens will be active.

●After the temperature is set, the system shall automatically confirm and save the temperature if no button operation is performed within 5 seconds; the symbol shall stop flashing, and the display shall return to the actual temperature. When the freezing compartment has attained its refrigerating effect, the set temperature shall be displayed.

■Rapid freezing

●The function of rapid freezing is designed for preservation of the nutrition of frozen foods, which shall help freeze foods through in the shortest loss of time. If a large amount of foods is frozen once, the rapid freezing function shall be started 24 hours in advance to reduce the temperature of the freezing compartment before the foods are put in.

●Under unlock state, by press button D Function Selection, symbol K Rapid Freezing can be selected and symbol K begins flashing, press button E Setting, symbol K shall be displayed and stop flashing, indicating the rapid freezing function of the freezing chamber is started.

After 56 hours, it shall stop the rapid freezing state.

Under rapid freezing, press button D, select symbol K, and press button E, and symbol K will disappear, indicating that the rapid freezing function has stopped.

Caution

Under rapid freezing, if artificial intelligence is set, the rapid freezing function shall be automatically stopped, and symbol K Rapid Freez–ing shall disappear. Under rapid freezing, no regulation of freezing temperature can be performed, but the freezing temperature and variable temperature are exceptions. If the freezing temperature is regulated, the symbol of rapid freezing shall flash to indicate that such an operation is banned.

■Rapid chill

Under unlock mode, by pressing button D Function Selection, symbol J Rapid chill can be selected and symbol J begins to flash, and press button E Setting, symbol J shall be displayed and stop flashing, indicating the rapid chill function of the variable temperature chamber is started.

Under such a state, the variable temperature chamber shall be operated according to the set shift, and its temperature shall be gradually changed to -18℃ or after 3 hours of rapid chill, it shall stop the rapid chill. Under rapid chill, press button D, select symbol J and press button E, and symbol J will disappear, indicating that the rapid chill function has stopped.

Caution

Under rapid chill, no regulation of variable temperature can be performed, but the refrigerating temperature and freezing temperature are exceptions. If the variable temperature is regulated, the symbol of rapid chill shall flash to indicate that such an operation is banned.

■Display control

The display screen will turn off automatically 30 seconds after an operation is finished. It will be lit up by opening the refrigerator door or pressing any key.

■Door open alarming

When the fridge door is open for more than 1 minute, the buzzer will sound 3 beeps every 30 seconds. The buzzer can be silenced by closing the door.

■Over temperature alarm for the freezer storage compartment

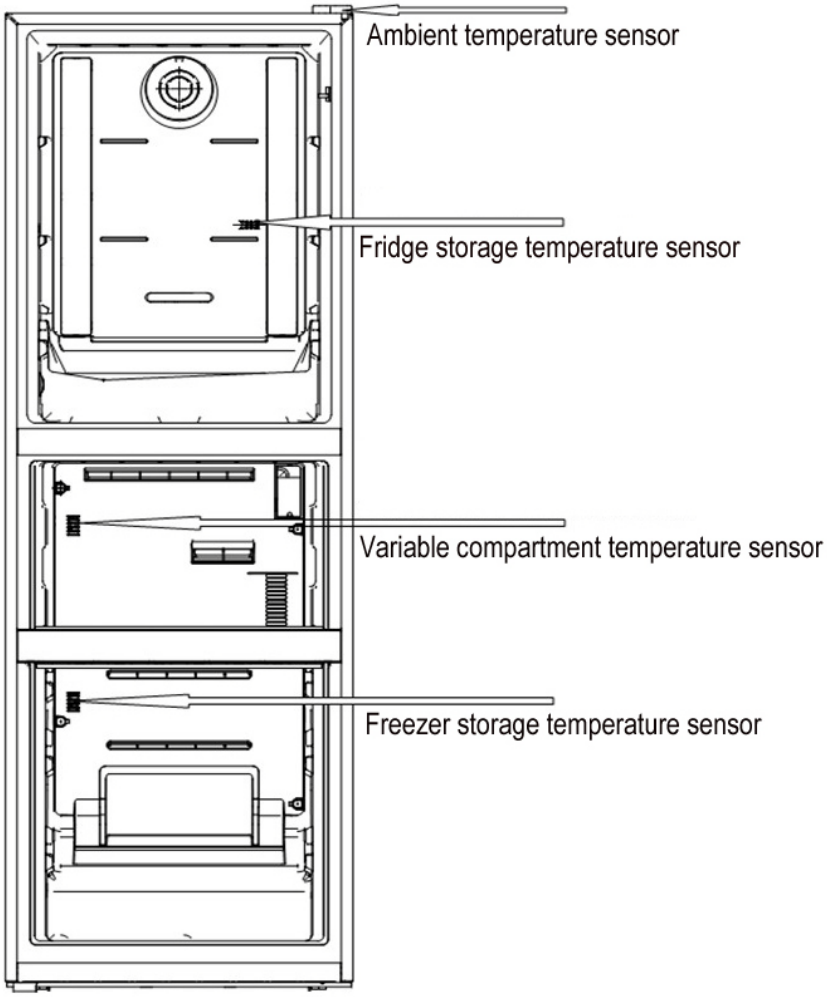
When the temperature of the freezer storage compartment is more than -3℃, the temperature of the freezer storage compartment that displayed on the display panel will flashing.

4-2. Error code display and sensor positions

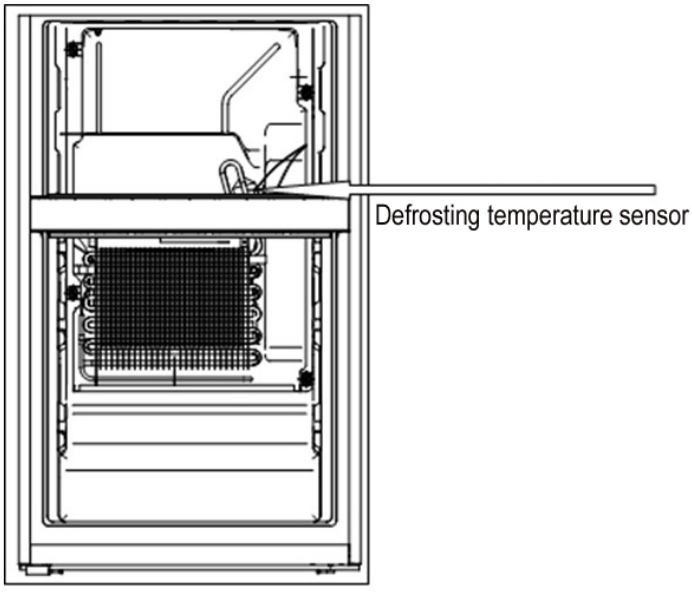
4-2-1. Error code display

Malfunction description	Sign	Display	Display position
Malfunction of the fridge evaporator sensor	RE SNR	F1	Display panel
Malfunction of the ambient temperature sensor	AT SNR	F2	Display panel
Malfunction of the fridge storage temperature sensor	R SNR	F3	Display panel
Malfunction of the freezer storage temperature sensor	F SNR	F4	Display panel
Malfunction of the variable temperature compartment sensor	C SNR	F5	Display panel
Malfunction of the defrosting temperature sensor	D SNR	F6	Display panel
Malfunction of the defrosting	/	Ed	Display panel

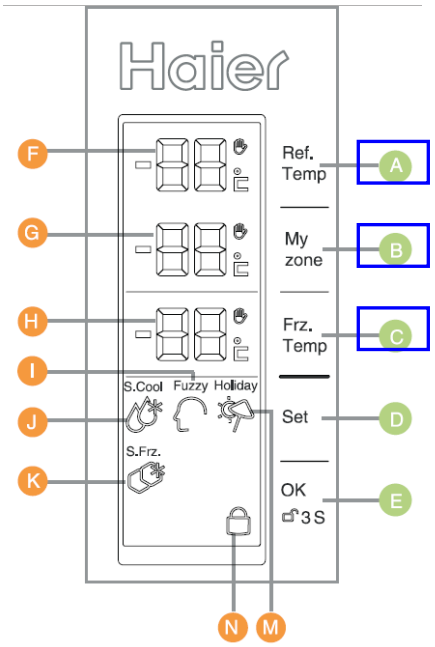
4-2-2. Graphic display of the sensor location



Freezer Compartment:



4-3. TEST MODE



MODE	OPERATION	WORKING CONDITION	REMARKS
TEST1	In the Unlock mode, press and hold button A+B+C on the door display panel at the same time for 3 seconds to enter the T1 MODE, the door display panel displays T1 T1 T1, and the refrigerator enters Forced Refrigeration Mode	1) The compressor and the fans shall do a high speed operation; 2) The damper is open; 3) The defrosting heater wire is disconnected.	This can be used to test the refrigeration performance.
TEST2	In the T1 MODE, press and hold the button A+B+C on the door display panel at the same time for 3 seconds to enter the T2 MODE, the door display panel displays T2 T2 T2, and the refrigerator enters Forced Defrosting Mode	1) The compressor and the fans and the damper are closed; 2) The defrosting heater is forced operated.	This can be used to test the defrosting system
TEST3	In the T2 MODE, press and hold the button A+B+C on the door display panel at the same time for 3 seconds to enter the T3 MODE, the door display panel displays T3 T3 T3, and the clapboard heater and the cover board heater enter Forced Heating Mode	1) The compressor and the fans and the damper and the defrosting heater are closed, 2) The clapboard heater and the cover board heater are forced operated.	This can be used to test the clapboard heater and the cover board heater.
TEST4	In the T3 MODE, press and hold	1) The compressor and the	/

	the button A+B+C on the door display panel at the same time for 3 seconds to enter the T4 MODE, the door display panel displays T4 T4 T4, and the refrigerator enters a Special Mode	freezer fan motor shall be forced operated, 2) The damper is open, 3) The defrosting heater wire is disconnected, 4) The fridge compartment operates normally.	
EXIT	In the T4 MODE, press and hold the button A+B+C on the door display panel at the same time for 3 seconds to Exit TEST MODE	The door display panel will resume normal display	/

Chapter 5 Control principle of electronic component

5-1. **Air damper**

(1) The damper is controlled with the Variable temperature compartment sensor C SNR.

(2) The damper is closed from the beginning of defrosting until at least 8 minutes after the defrosting is finished.

(3) Upon initial powering on or resetting of the control panel, the damper conducts a close-and-open cycle before acting according to the control conditions in item (1).

(4) The damper will be forced to conduct an open-and-close cycle if it has been closed for 1 hour. After that, its closing/opening will be controlled by C SNR.

(5) If the temperature is still rising (or dropping) within 10 minutes after opening (or closing) of the air door, it will open (or close) once again.

5-2. **Control principle of the freezer fan motor**

The freezer fan motor is controlled by the control panel according to the following conditions. The DC fan's rotation speed is regulated with the input Voltage and the AC fan operates directly.

(1) ON/OFF condition of the freezer fan motor is controlled with the Freezer storage temperature sensor F SNR;

(2) ON/OFF condition of the freezer fan motor is same with the Compressor.

5-3. **Control principle of the fridge fan motor**

The fridge fan motor is controlled by the control panel according to the following conditions. The DC fan's rotation speed is regulated with the input Voltage and the AC fan operates directly.

(1) ON/OFF condition of the fridge fan motor is controlled with the Fridge storage temperature sensor R SNR.

(2) When the Fridge storage compartment door is open, the fridge fan motor will not run.

5-4. **Defrosting control principle**

(1) A defrosting cycle will be started once the compressor has operated for 12-18 hours accumulatively. It will stop defrosting when the defrosting sensor detects a temperature over 10ºC.

(2) The damper and the freezer fan motor is closed, the compressor stops during defrosting.

(3) After initial powering on or resetting of the control panel, it will start the first defrosting cycle after the compressor has operated for 5 hours accumulatively.

(4) It may enter the defrosting state when the defrosting sensor is malfunctiony (short-circuit or open-circuit). In this case, it will exit the defrosting state after 30 minutes.

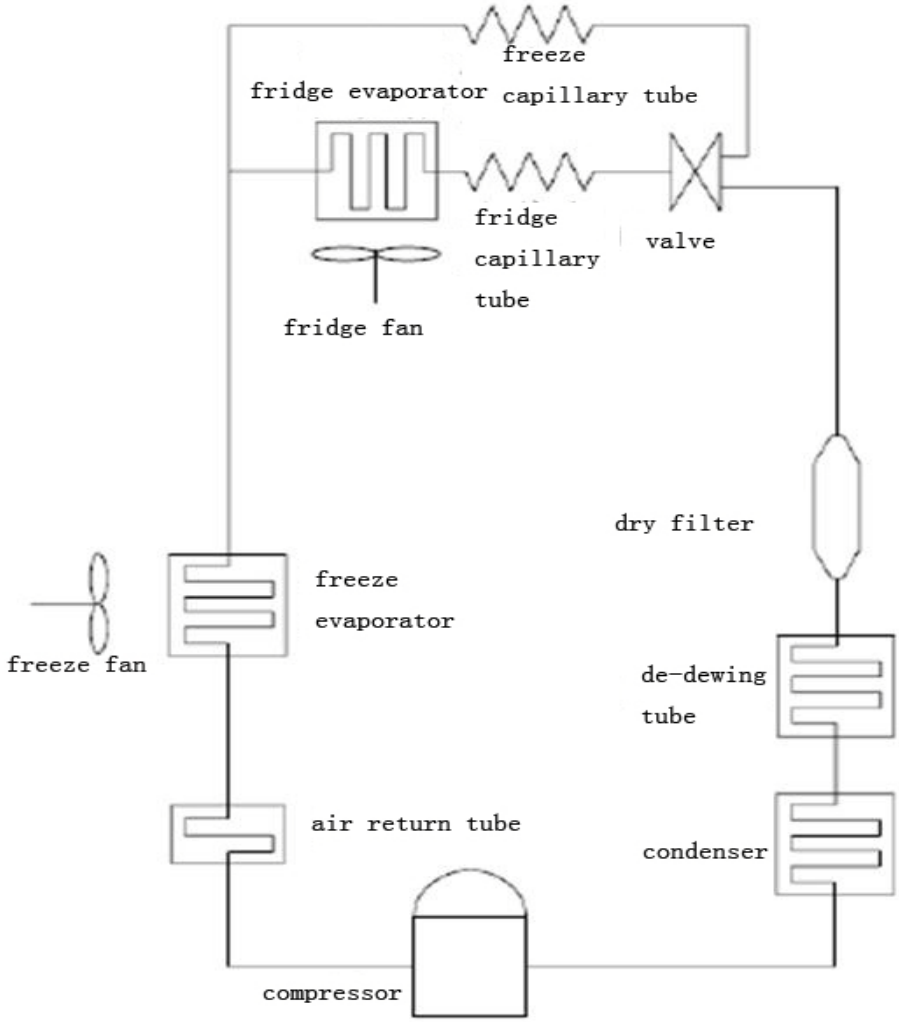
Chapter 6 System flow principle

6-1. Refrigeration flow chart

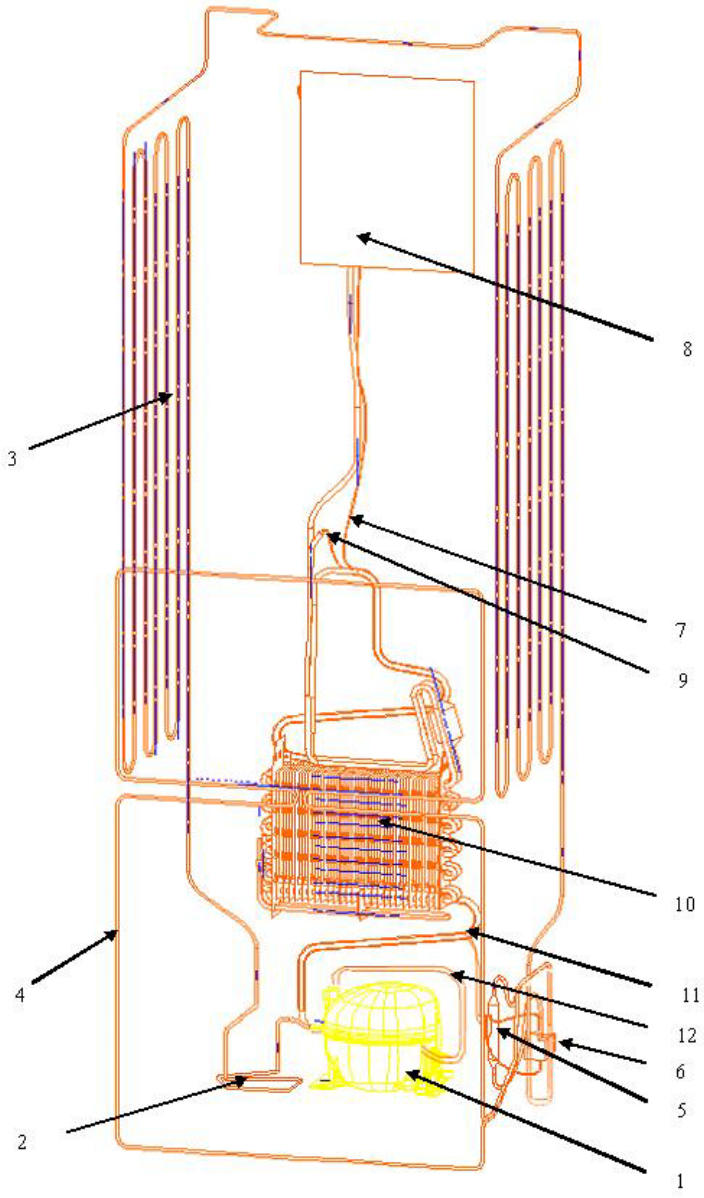
Principle diagram and description of the refrigeration cycle

The refrigerant is compressed in the compressor, from there, it enters the condenser, the de-dewing tube, and the dry filter, and goes into the valve, from there,it enters fridge and freeze evaporator after being throttled and decompressed in the capillary tube. Finally, it returns to the compressor through the air return tube.

Principle diagram of the refrigeration cycle:



6.2. Perspective of the refrigeration system



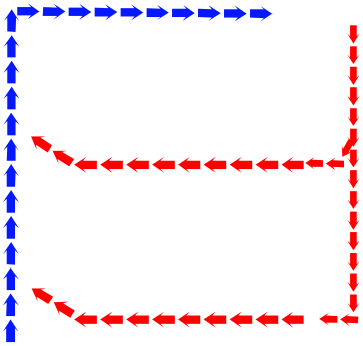
Refrigeration flow cycle
Fridge refrigeration flow cycle:
1—2—3—4—5—6—7—8—10—11—12—1
Freeze refrigeration flow cycle:
1—2—3—4—5—6—9—10—11—12—1

1.compressor 2.evaporator tube 3.condenser4.de-dewing tube 5.dry filter 6.valve 7.fridge capillary tube 8.fridge evaporator 9.freeze capillary tube 10.freeze evaporator 11.air return tube 12.air return connect tube

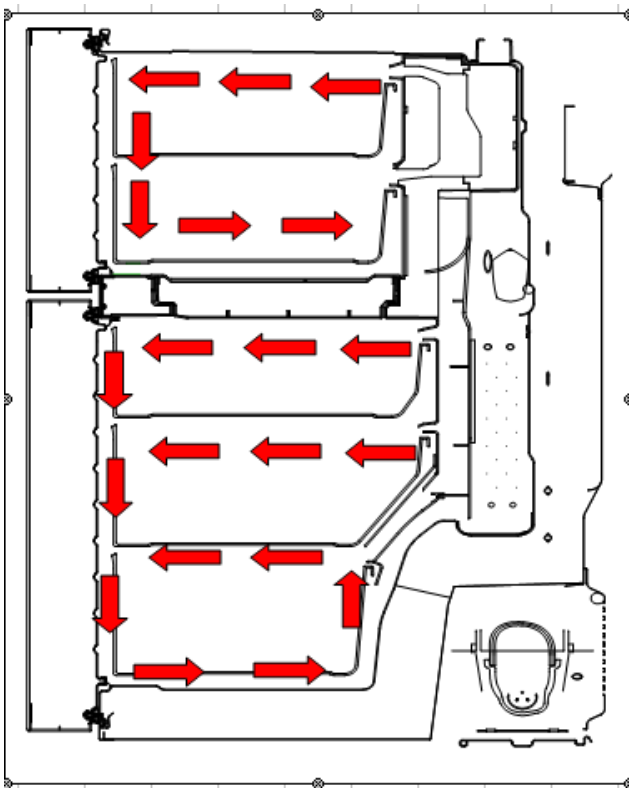
6.3 Air Flow Chart

Schematic drawing and description of air circulation in the refrigerator air-duct

Fridge compartment air flow chart

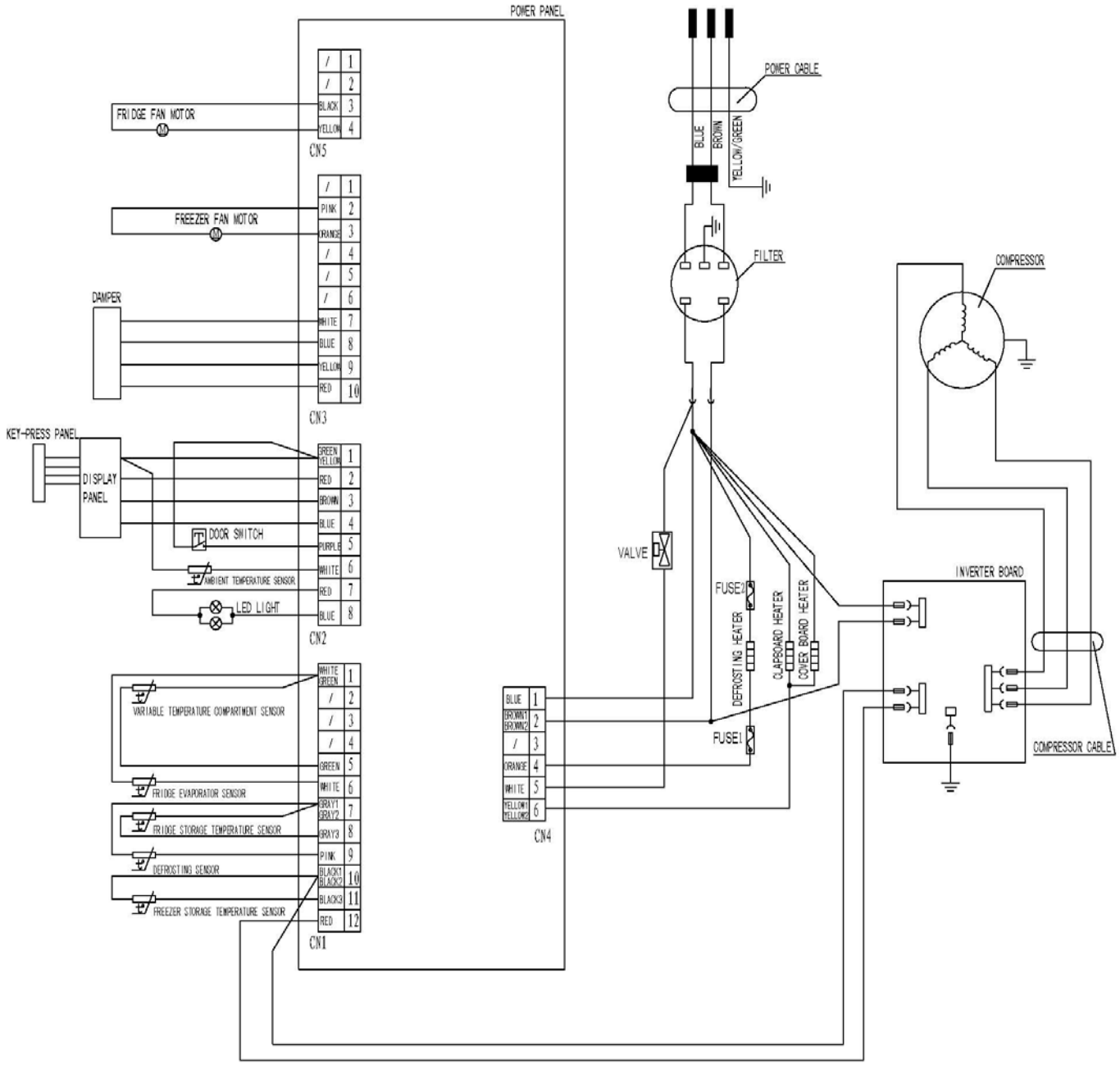


Freezer compartment air flow chart



Chapter 7 Circuit diagram

7-1. Main control PCB diagram



7-2. Main control PCB connections

There are 5 connectors on the main control panel.

CN1 is the connector for the sensors and the PWM. Its pins are:

1: GND;

2-4: Null;

5: Pin5 and pin1 connect to the variable temperature compartment sensor. We can test the sensor with these two wires. Its resistance in normal operation is between 10.9 and 25.19kΩ (correspond to -10℃～-25℃). The resistance at normal temperature is between 2.49 and 1.61kΩ (correspond to 20℃～30℃);

6: Pin6 and pin1 connect to the fridge evaporator sensor. We can test the sensor with these two wires. Its resistance in normal operation is between 6.35 and 3.88kΩ (correspond to 0℃～10℃). The resistance at normal temperature is between 2.45 and 1.58kΩ (correspond to 20℃～30℃);

7: GND;

8: Pin8 and pin7 connect to the fridge storage sensor. Resistance test is the same as the fridge evaporator sensor;

9: Pin9 and pin7 connect to the defrosting sensor. Resistance test is the same as the variable temperature compartment sensor;

10: GND;

11: Pin11 and pin10 connect to the freezer sensor. Resistance test is the same as the variable temperature compartment sensor;

12: PWM;

CN2 is the connector for display panel, the door switch, the LED lights and ambient temperature sensor. Its pins are:

1: GND；

2: +5V；

3: Com-in；

4: Com-out；

5: Door switch signal；When the door is opened, GND and the signal wires are switch to conduction. When the door is closed, the wires are disconnected;

6：Pin6 and pin1 connect to the ambient temperature sensor. Resistance test is the same as the fridge evaporator sensor;

7: LED lights +12V；

8: LED lights GND；

CN3 is the connector for the freezer fan motor and the damper. Its pins are:

1: Null;

2: Freezer fan motor GND;

3: Freezer fan motor +15V(MAX);

4-6: Null;

7-10: Damper motor;

CN4 is the connector for the power cable and heaters and valve. Its pins are:

1: N;

2: L;

3: Null;

4: Defrosting heater. The resistance between it and the N is 345Ω±10%;

5: Valve;

6: Clapboard heater and cover board heater. The resistance between it and the N is 4033Ω±10%;

CN5 is the connector for the fridge fan motor. Its pins are:

1-2: Null;

3: Fridge fan motor GND;

4: Fridge fan motor +15V(MAX).

Chapter 8 Trouble shooting

8-1. Common problems and solutions

8-1-1 Symptom: no defrosting

Check:

1) Remove the freezer fan cover plate to check if all the connectors are connected properly and test if there is 220V voltage output across the terminals of the heating wire.
2) Measure the resistance of the heating wire with a multimeter. It should be 345Ω around.
3) Measure the resistance of the defrosting fuses. If they're zero, the fuses are OK. If they're infinite, the fuses are malfunctioning.
4) If no malfunction is found in the above checks, please test the defrosting temperature sensor with a multimeter.

8-1-2 Symptom: neither displaying nor starting when powering on

Check:

1) Check if the power supply is connected properly.
2) Remove the main control panel and examine its back side carefully to see if there are solder skips or open soldering;
3) Check if the connector of the freezer door hinge is connected properly.

Solutions:

1) If there is dry soldering or open soldering on the control panel, resolder it with an electrical iron.
2) If any connector is not connected properly, replug it firmly.

8-1-3 Symptom: poor freezing effect accompanied by loud noise

Check:

1) Check if there is apparent abnormal sound in the freezer storage compartment. Remove the fan cover plate, please first eliminate the possibility of improper installation.
2) If the freezer fan does not run, remove it and check if its connector are connected properly. Test if there is approximately 11VDC voltage across pin2 and pin 3 of CN3. If there is no 11VDC voltage, the main control panel can generally be determined to be malfunctioning. If there is 11VDC voltage, the freezer fan can generally be determined to be malfunctioning.
3) If the fan rotates abnormally, the fan is malfunctioning.

Solutions:

（1）If there is apparent abnormal sound in the freezer storage compartment, check if the fan base is firmly fixed, if the fan vanes are installed properly, and if they intervene with the wires. If any of these problems is found, please remove the fan and reinstall it properly.

（2）If the fan connector is not installed properly, disconnect the terminals and reinstall the connector.

（3）If the main control panel or the fan is malfunctioning, replace the malfunctioning one with a good spare part.

8-2 Examination and solutions for other problems

Problems	Causes	Solutions
Water/moisture/frost in the refrigerator		
Moisture accumulates on the refrigerators inner walls	● Hot and moist climate. ● The door is not closed tightly ● The door is opened too frequently or for too long time	● Accumulation of frost and moisture accelerate in such climate. ● Make sure the refrigerator is level and there is no food or container interfering with the door ● Do not open the door so frequently
Water/moisture/frost on outside surface of the refrigerator		
Moisture accumulates on the refrigerator's outside surface or between two doors	● Damp climate ● The refrigerator door is not closed tightly. This causes mixing of the cold air in the refrigerator with the warm air outside it	● It is normal in damp climate. The moisture will decrease when the humidity drops. ● Make sure the refrigerator is level and there is no food or container interfering with the door
Refrigerator operation		
The compressor does not work	● The refrigerator is in defrosting cycle. ● The refrigerator is not plugged into a power outlet.	● It is normal for an automatic defrosting refrigerator. ● Verify the plug is plugged in the socket firmly.
The fridge storage compartment does not work	● The air door cable is not connected properly. ● The fan does not work ● The fridge storage compartment is turned off	● Check if the air door cable is not connected properly and install it correctly if not so. Verify that the air door acts normally with the Fridge ON/OFF key on the display panel ● The fan does not work while the refrigeration air door is open. Please check if the door on-off behind the front decoration strip is installed properly. Reinstall it correctly if not so. ● Turn on the fridge storage compartment manually
The refrigerator runs frequently or runs for too long period	● The indoor or outdoor temperature is high ● The refrigerator has been powered off for a period of time. ● The door is opened too frequently or for long periods. ● The door of the fridge / freezer storage compartment is not tightly closed. ● The temperature setting for the freezer storage compartment is too low ● The door gasket of the fridge/freezer storage compartment is dirty, worn, cracked or mismatched.	● In this case, it is normal for the refrigerator to run longer. ● Normally, it takes 8 to 12 hours for the refrigerator to totally cool down. ● Warm air enters the refrigerator and causes it to start frequently. Please do not open the door so frequently. ● Make sure the refrigerator is level place and there is no food or container interfering with the door. ● Set the temperature higher until satisfactory refrigerator temperature is obtained. It takes 24 hours for the refrigerator temperature to become stable. ● Clean or replace the door gasket. Leakage gap of door gasket can cause longer running time of the refrigerator in order to maintain desired temperature.

Too high temperature		
Too high temperature in the fridge/freezer storage compartment	● The door is opened too frequently or for too long periods of time ● Temperature is set too high ● The door is not closed tightly	● Warm air will enter the refrigerator whenever the door is opened. Try to open the door as infrequently as possible. ● Reset the temperature. ● Make sure the refrigerator is on a level surface and there is no food or container interfering with the door.
The temperature in the freezer storage compartment is too high while the temperature in the fridge storage compartment is OK	● The temperature is set too high	● Set the freezer temperature lower. It takes 24 hours for the temperature of the refrigerator to become stable.
The temperature in the fridge storage compartment is too high while the temperature in the freezer storage compartment is OK	● The temperature is set too high	● Set the fridge temperature lower. It takes 24 hours for the temperature of the refrigerator to become stable.
Bad odors in the refrigerator		
The inside of the refrigerator is dirty	● The inside of the refrigerator needs cleaning ● Food with strong odor is stored in the refrigerator	● Clean the internal of the refrigerator ● Wrap the food tightly.
If you hear...		
Beeps	● The fridge storage compartment door is open ● The temperature in the freezer storage compartment is too high	● Close the door or silence the alarm manually ● The alarm is normal when it is first started due to relatively higher temperature.
Abnormal sound	● The refrigerator is not located on a level surface ● The refrigerator touches some object around it	● Adjust the feet to level the refrigerator. ● Remove objects around it.
Slight sound similar to that of flowing water	● It is the sound of the refrigerating system	● Normal.
Heating of cabinet	● The de-dew tube is de-dewing	● It is a process to prevent dewing. It is a normal phenomenon.

Sincere forever

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